



PCT/GB 2003 / 0 0 5 3 4 3



INVESTOR IN PEOPLE

**PRIORITY  
DOCUMENT**  
SUBMITTED OR TRANSMITTED IN  
COMPLIANCE WITH RULE 17.1(a) OR (b)

The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ

RECEIVED  
22 JAN 2004

WIPO PCT

BEST AVAILABLE COPY

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

Dated 9 January 2004

Patents Form 1/77

Patents Act 1977  
(Rule 16)★

09 MAY 2003

The  
Patent  
Office

12HAT03 EB06160-5/000056  
P01/7700 0.00-0310700.0

1/77

RECEIVED BY HAND

## Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road  
Newport  
South Wales  
NP9 1RH

9 MAY 2003

1. Your reference P35497GB/GVR

2. Patent application number  
(The Patent Office will fill in this part)

0310700.0

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Freedom Innovations Limited  
(formerly Sunderland Black Limited)  
Company no. 4256555  
48 Suffolk Road  
Sheffield, S2 4AL

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

United Kingdom

8628695001

4. Title of the invention

Hairdryer

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Kilburn & Strobe  
20 Red Lion Street  
London  
WC1R 4PJ

Harrison Goddard Foote  
Fountain Precinct  
Leopold Street  
Sheffield  
S1 2QD

Patents ADP number (if you know it)

7914237001  
125001 ✓

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
  - b) there is an inventor who is not named as an applicant, or
  - c) any named applicant is a corporate body.
- See note (d))

YES

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description 4

Claim(s) 2

Abstract -

Drawing(s) 2

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.

Signature

*G. V. Roberts*

Date 9.5.03

12. Name and daytime telephone number of person to contact in the United Kingdom  
Gwilym V. Roberts  
Tel: 020 7539 4200

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

Hairdryer

5 The invention relates to a hairdryer, for example a cordless hairdryer of the type comprising a rechargeable battery to power a motor that drives a fan, and a gas canister to supply gas to a catalyst for flameless combustion and which provides heat to the air driven by the fan.

10 The concept of such a hairdryer is well known, (see for example, US-A-5009592, US-A-4635382, US-A-4800654, US-A-4903416, DE-A-3103843) but no commercial product has yet been launched on the market. The reasons for this are complex and are connected with, among other things, the inefficiency of batteries and the inability to convert the potential energy in the gas to heat in the air in an efficient way.

15 One approach is described in International patent application No. PCT/GB2002/005498, commonly assigned herewith and incorporated herein by reference. According to the approach described therein a hairdryer comprises an air passage having baffles arranged to avoid the risk of flameless combustion and also providing improved electronic control and layout.

20 The invention is set out in the claims. Because a finger receiving aperture is provided in the hairdryer handle, the invention provides improved handling options and more control for the user.

25 The invention is further described hereinafter, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of a hairdryer according to the present invention; and

Fig. 2 is an exploded view of the hairdryer.

Referring to Figure 1 a cordless hairdryer 10 comprises a housing 12 with at one end a nozzle 18. The internal mechanisms of the hairdryer will be well known to the skilled reader and are not described here but can, for example, be of the type described in PCT/GB2002/005498 which, in overview includes a gas burner and gas reservoir and a fan, and a control circuit and a battery for powering the fan.

The hairdryer 10 includes a body portion 14 on which the nozzle 18 is provided at the front and, at the rear and projecting downwardly from the body portion 14 a handle 16 is provided. The handle is generally oval in shape and includes a substantially concentric aperture 20 therethrough such that the handle has front and rear portions 22, 24 respectively joined by a base portion 26. The rear portion 24 acts as a handle portion and is of appropriate shape and diameter to be held comfortably and ergonomically by the user, with the user's fingers received in the aperture 20. The front portion 22 is preferable of lesser diameter in cross section than the rear portion 24.

Because of the provision of the aperture and the effective division of the handle into two parts as a result greater handling options are provided allowing more control for the user. In addition greater freedom for positioning of controls such as on/off, temperature selection, fan speed and so forth is provided. For example the controls can be placed on either the front 22 or the rear portion 24 or both. Preferably the controls 27 are placed on the front, inner face of the handle 16 allowing finger operation by the user. In addition controls (not shown) can be placed on the rear, outer face of the rear portion for thumb operation. Accordingly, more of the free space below the body portion 14 is used but without an unmanageably large handle, whilst retaining the natural

look of a hairdryer have a handle below. The aperture or loop 20 further provides a natural and robust hanging point for storage in particular by provision of the base portion 26.

5 In the preferred embodiment the batteries are stored in the handle 16, either in the rear portion 24 or the front portion 22 or both, making use of the additional space available. Most preferably the batteries are in the rear portion. As a result the weight is centred through the handle potentially offering better handling and balance whilst maintaining a neutral wrist angle in use.

10

The housing including the body portion 14 and handle 16 can be formed in any appropriate manner and from any appropriate materials as will be apparent to the skilled reader.

15 The manner in which the hairdryer 10 is assembled can be seen in Fig. 2. In particular, it will be seen that the body portion 14 comprises front and rear mouldings 30, 32 which can carry additional filter and nozzle components (not shown). The front and rear mouldings mate to form a housing around burner and fan assembly 34, 36. The housing is received between the two clamshell halves 38, 40 of a handle assembly including at the base the two halves of the handle 16, an intermediate gas canister receiving portion 42 and an upper housing receiving portion 44 which closes around the housing. A PCB and battery pack assembly 46 is received in the handle 16 as discussed above.

20

25 The intermediate gas canister receiving portion 42 comprises a cylindrical recess in each clamshell half 38, 40 of the handle assembly, extending parallel with the axis of the body portion 14 of the hairdryer and open at the front end to allow gas canisters 48 to be slid in and out for supplying gas to the burner

42. As a result a simple configuration for replacing exhausted canisters is provided while maintaining the comfort and balance of the hairdryer 10.

5 It will be appreciated that features and components from the various  
embodiments can be combined or interchanged as appropriate without  
departing from the inventive concept. The individual components described, to  
the extent they are generic or off-the-shelf products, will be well known to the  
skilled reader and hence have not been described in detail. Although the  
discussion is directed to a cordless hairdryer the invention can be applied as  
10 appropriate to a corded hairdryer and indeed other hand-held implements, with  
or without cord, having a handle and body portion.

## Claims

1. A hairdryer comprising: a body portion and a handle projecting therefrom in which the handle includes a finger receiving aperture therethrough.
- 5 2. A haridryer as claimed in claim 1 in which the body portion includes a nozzle at a front end and the handle comprises corresponding front and rear portions either side of the aperture.
3. A hairdryer as claimed in claim 2 in which the rear portion comprises a handle portion.
- 10 4. A hairdryer as claimed in claim 2 or 3 in which finger and/or thumb operable controls are provided on the rear portion.
5. A hairdryer as claimed in any of claims 2 to 4 in which the handle further includes a base portion for hanging the hairdryer.
- 15 6. A hairdryer as claimed in any preceding claim including a power source provided in the handle.
7. A hairdryer as claimed in any preceding claim further including an intermediate fuel cell receiving portion between the body portion and the handle.
8. A hairdryer as claimed in claim 7 in which the intermediate portion is arranged to slidably receive a fuel cell.
- 20 9. A hairdryer as claimed in claim 8 in which the intermediate portion comprises a recess open towards the front of the hairdryer.
10. A hairdryer as claimed in any preceding claim comprising a cordless hairdryer.
- 25 11. A set of parts for assembling a hairdryer comprising a body portion and a handle assembly, the handle assembly including a handle and a body portion receiving portion



12. A hand held implement comprising: a body portion and a handle projecting therefrom in which the handle includes a finger receiving aperture therethrough.

5 13. A hairdryer or hand held implement substantially as described herein with reference to the drawings.

1000000  
1000000  
1000000

4/2

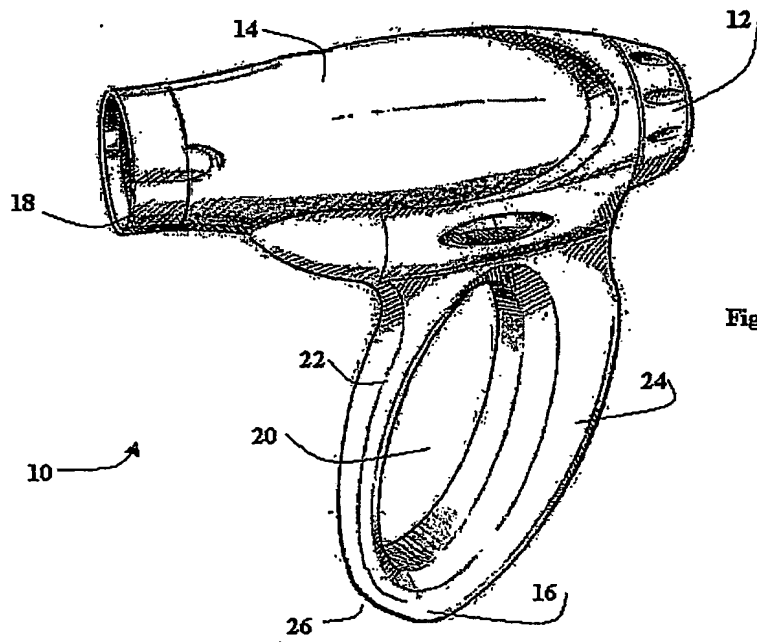


Fig. 1

2/2

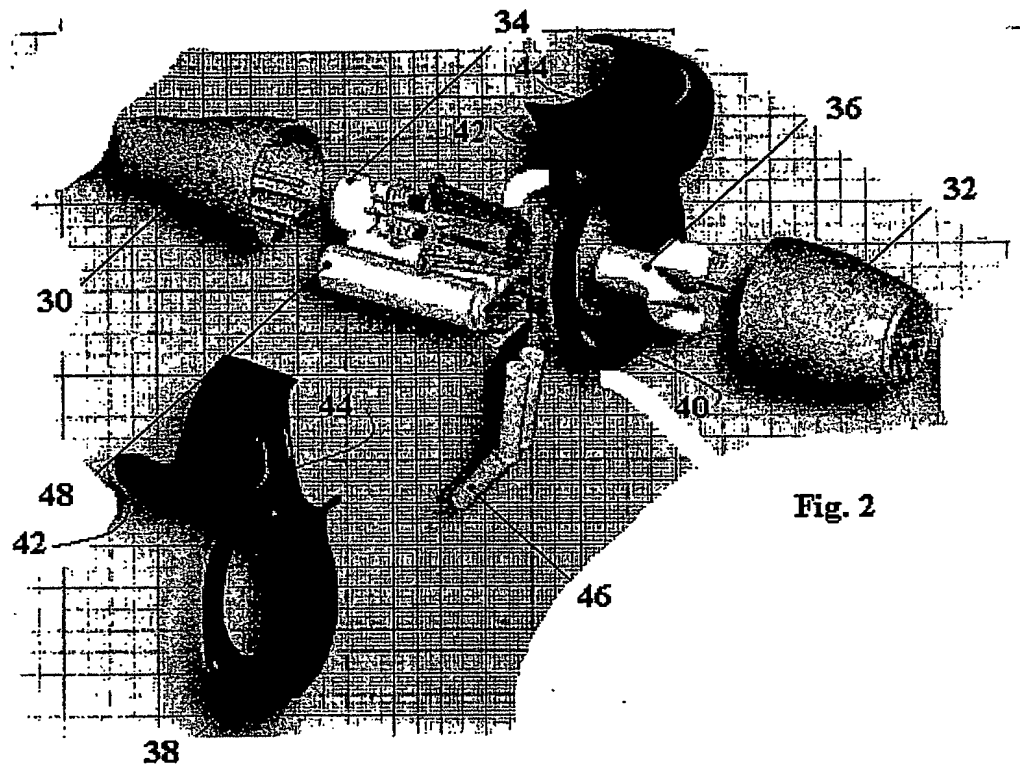
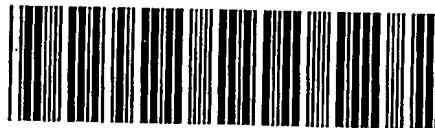


Fig. 2

PCT Application  
**PCT/GB2003/005343**



**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☒ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**